

Serial Number: 09/744,100C**ENTERED****RECEIVED**
AUG 12 2003
TECH CENTER 1600/2900

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number input by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☒ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☐ Other: _____



1600

RAW SEQUENCE LISTING

DATE: 08/11/2003

PATENT APPLICATION: US/09/744,100C

TIME: 12:11:07

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\08112003\I744100C.raw

3 <110> APPLICANT: Cahoon, Rebecca
 4 Gutteridge, Steven
 5 Lee, Jian-Ming
 6 McGonigle, Brian
 7 Rafalski, Antoni
 9 <120> TITLE OF INVENTION: Ornithine Biosynthesis Enzymes
 11 <130> FILE REFERENCE: BB-1174
 13 <140> CURRENT APPLICATION NUMBER: 09/744,100C
 14 <141> CURRENT FILING DATE: 2001-01-16
 16 <150> PRIOR APPLICATION NUMBER: PCT/US99/15931
 17 <151> PRIOR FILING DATE: 1999-07-14
 19 <150> PRIOR APPLICATION NUMBER: 60/093,209
 20 <151> PRIOR FILING DATE: 1998-07-17
 22 <160> NUMBER OF SEQ ID NOS: 12
 24 <170> SOFTWARE: Microsoft Office 97
 26 <210> SEQ ID NO: 1
 27 <211> LENGTH: 1201
 28 <212> TYPE: DNA
 29 <213> ORGANISM: Zea mays
 31 <400> SEQUENCE: 1
 32 tcgagctcga gctcgagccc cagtcaccgc agccatgctc ctcacgaaac cctacctctc 60
 33 caactcgctc cttccagtc ccatcccgcc gccgctcgggc cctactctca gctccaacca 120
 34 tgcaagcccc cttgccgccc ctacttgccg tcgcagccgc ctccgcatct ccgccacatc 180
 35 cacggctgcg ccgtctcctt cgctcggtgc cgctgccacc gcgtcgctga gtcgagtga 240
 36 cgtgctctcg gaggcgctcc cttttattca gcgattcaaa ggcaagacgg tgggtggtcaa 300
 37 gtacggcggt gcggcgatga agtccccgga gctgcaggcg tccgtgatcc gcgatctcgt 360
 38 gctgctctcc tgcgtcggcc tccgccccgt gcttggtcac ggcggcggtc cggagattaa 420
 39 ttcttggtcg ctgcgcgctg gcgtcgagcc gcagttccgc gacggcctcc gcgtcacgga 480
 40 cgcgctcacc atggaggctg tcgagatggt gctagtcggg aaggtaaca aaaaccttgt 540
 41 ttccctcatc aacatcgcgg gaggcaccgc cattggtctg tgcggcaagg acgcgcgcct 600
 42 tatcaccgct cgcccgctc caaatgcagc ggcgctggga ttcgctcgcg aggtttcgcg 660
 43 cgtggacgcc accgtcctcc atcccatcat cgcccgggc catatcccg ttatcgccac 720
 44 cgttgccgcc gacgagactg ggcaagccta taacatcaat gctgatacgg cggtggcga 780
 45 gattgccgct gccgtggcg ccgagaagct gctgttgctc acagatgtgt ctggcatttt 840
 46 ggcggaccgt aatgaccctg ggagcctggt gaaggtggtc gacattgctg ggggtcgga 900
 47 gatggtggt gacgggaagg tagctggtg gatgataccc aaggtggagt gttgtgttca 960
 48 cgcccttgca caaggtgtac acaccgcaag tatcattgat ggcggtgttc cacactctct 1020
 49 tctgcttgag attctcacag acgagggcac aggcaccatg atcactggct gagctgcttc 1080
 50 atgccttcat ggtattttcc tgtgcctctt ttctcatatt gttgtgttt atggctatgt 1140
 51 agactaaact caagattgca ataagactac ctaagtttg ttgaaaaaa aaaaaaaaaa 1200
 52 a 1201
 54 <210> SEQ ID NO: 2
 55 <211> LENGTH: 345

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Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\08112003\I744100C.raw

56 <212> TYPE: PRT

57 <213> ORGANISM: Zea mays

59 <400> SEQUENCE: 2

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60 Met Leu Leu Thr Lys Pro Tyr Leu Ser Asn Ser Leu Leu Pro Val Pro
61   1           5           10           15
63 Ser Pro Pro Pro Ser Gly Pro Thr Leu Ser Ser Asn His Ala Ser Pro
64           20           25           30
66 Leu Ala Ala Pro Thr Cys Arg Arg Ser Arg Leu Arg Ile Ser Ala Thr
67           35           40           45
69 Ser Thr Ala Ala Pro Ser Pro Ser Ser Ala Ala Ala Ala Thr Ala Ser
70           50           55           60
72 Leu Ser Arg Val Asp Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg
73  65           70           75           80
75 Phe Lys Gly Lys Thr Val Val Val Lys Tyr Gly Gly Ala Ala Met Lys
76           85           90           95
78 Ser Pro Glu Leu Gln Ala Ser Val Ile Arg Asp Leu Val Leu Leu Ser
79           100          105          110
81 Cys Val Gly Leu Arg Pro Val Leu Val His Gly Gly Gly Pro Glu Ile
82           115          120          125
84 Asn Ser Trp Leu Leu Arg Val Gly Val Glu Pro Gln Phe Arg Asp Gly
85           130          135          140
87 Leu Arg Val Thr Asp Ala Leu Thr Met Glu Val Val Glu Met Val Leu
88 145           150          155          160
90 Val Gly Lys Val Asn Lys Asn Leu Val Ser Leu Ile Asn Ile Ala Gly
91           165          170          175
93 Gly Thr Ala Ile Gly Leu Cys Gly Lys Asp Ala Arg Leu Ile Thr Ala
94           180          185          190
96 Arg Pro Ser Pro Asn Ala Ala Ala Leu Gly Phe Val Gly Glu Val Ser
97           195          200          205
99 Arg Val Asp Ala Thr Val Leu His Pro Ile Ile Ala Ala Gly His Ile
100          210          215          220
102 Pro Val Ile Ala Thr Val Ala Ala Asp Glu Thr Gly Gln Ala Tyr Asn
103 225          230          235          240
105 Ile Asn Ala Asp Thr Ala Ala Gly Glu Ile Ala Ala Ala Val Gly Ala
106           245          250          255
108 Glu Lys Leu Leu Leu Leu Thr Asp Val Ser Gly Ile Leu Ala Asp Arg
109           260          265          270
111 Asn Asp Pro Gly Ser Leu Val Lys Val Val Asp Ile Ala Gly Val Arg
112           275          280          285
114 Lys Met Val Ala Asp Gly Lys Val Ala Gly Gly Met Ile Pro Lys Val
115           290          295          300
117 Glu Cys Cys Val His Ala Leu Ala Gln Gly Val His Thr Ala Ser Ile
118 305           310          315          320
120 Ile Asp Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp
121           325          330          335
123 Glu Gly Thr Gly Thr Met Ile Thr Gly
124           340          345
126 <210> SEQ ID NO: 3
127 <211> LENGTH: 1186

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RAW SEQUENCE LISTING

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Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\08112003\I744100C.raw

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128 <212> TYPE: DNA
129 <213> ORGANISM: Oryza sativa
131 <220> FEATURE:
132 <221> NAME/KEY: unsure
133 <222> LOCATION: (613)
134 <223> OTHER INFORMATION: n = A, C, G, or T
136 <400> SEQUENCE: 3
137 gcacgagtag agcgccgccc ccgcccgcct gctcctcgcg aagccccacc tctcctcctc 60
138 ctctttcctc ccatccacgc ggggtgtctag ccccgctccg ggtcccacc acgcaaagcc 120
139 catcgccgcc tctcccgccc ctgcacgctg cctccgtctc gccgtcacat ccgccgcggc 180
140 gccggtgctg tcgtcggcgg aggcggcgcc ggcgctgagc cgcgtggatg tgctctcaga 240
141 ggcgctcccc ttcattccagc gcttcaaggg gaagaccgtg gtgggtgaagt acggcgggcg 300
142 ggcgatgaag tcgcccggagc tccaggcttc agtgatccgc gacctggtcc tctctcgtg 360
143 cgtcggcctc caccctcgtc tcgtccacgg cggcgggccc gagatcaact cctgggtgct 420
144 ccgcgtcgcc gtcgagccgc agttccggaa cgccctccgc gtcactgacg cgctcaacat 480
145 ggaggtcgtc gagatgggtc tcgtccgcaa ggtcaacaaa gaactcctct ccctcatcaa 540
146 actcccgggg gggagcgccg taagtctctg ttggaaggaa gctcgccctc tcaacgagcg 600
W--> 147 gccctccccg aangaaaagg gccttcggtt tgcggcgggg gtctggcgcg tggacgccac 660
148 cgtcctccac ccaatcatcg cctccggtca catcccggtc atcgccactg tgggcgcccga 720
149 cgagaccggg caggcctaca acatcaacgc tgacacggcg gccggcgaga tcgccgccgc 780
150 ggtcggcgcg gagaagctgt tgctgtcac agatgtgtct ggaattctgg ccgaccgtaa 840
151 tgaccccggg agtctggtga aagagatcga cattgctggg gtgcggcaga tggtgcccga 900
152 cgggcaggta gctggtggga tgataccgaa ggtggaatgc tgcgtgcgtg ccctcgaca 960
153 gggcgtgcac actgcaagca tcatcgatgg gcgtgtccc cactcgttgc tgctcgagat 1020
154 tctcacagat gagggcactg gcactatgat cactggctga ggtgattcat ccgctcgtgg 1080
155 tattctccgg tgcctctctt ctcatactgt aatgtaattt gcatttgata tgcctcatga 1140
156 ttgcaataag aattgtattc ctcaaaaaaa aaaaaaaaaa aaaaaa 1186
158 <210> SEQ ID NO: 4
159 <211> LENGTH: 343
160 <212> TYPE: PRT
161 <213> ORGANISM: Oryza sativa
163 <220> FEATURE:
164 <221> NAME/KEY: UNSURE
165 <222> LOCATION: (195)
166 <223> OTHER INFORMATION: Xaa = ANY AMINO ACID
168 <400> SEQUENCE: 4
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170 1 5 10 15
172 Thr Arg Val Ser Pro Ala Pro Gly Pro Asn His Ala Lys Pro Ile
173 20 25 30
175 Ala Ala Ser Pro Ala Pro Arg Arg Cys Leu Arg Leu Ala Val Thr Ser
176 35 40 45
178 Ala Ala Ala Pro Ala Ala Ser Ser Ala Glu Ala Ala Ala Ala Leu Ser
179 50 55 60
181 Arg Val Asp Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg Phe Lys
182 65 70 75 80
184 Gly Lys Thr Val Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro
185 85 90 95
187 Glu Leu Gln Ala Ser Val Ile Arg Asp Leu Val Leu Leu Ser Cys Val

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Input Set : A:\PTO.AMC.txt

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188      100      105      110
190 Gly Leu His Pro Val Leu Val His Gly Gly Gly Pro Glu Ile Asn Ser
191      115      120      125
193 Trp Leu Leu Arg Val Gly Val Glu Pro Gln Phe Arg Asn Gly Leu Arg
194      130      135      140
196 Val Thr Asp Ala Leu Asn Met Glu Val Val Glu Met Val Leu Val Arg
197 145      150      155      160
199 Lys Val Asn Lys Glu Leu Leu Ser Leu Ile Lys Leu Pro Gly Gly Ser
200      165      170      175
202 Ala Val Ser Leu Cys Trp Lys Glu Ala Arg Leu Leu Asn Glu Arg Pro
203      180      185      190
W--> 205 Ser Pro Xaa Glu Lys Gly Leu Arg Phe Val Gly Gly Val Trp Arg Val
206      195      200      205
208 Asp Ala Thr Val Leu His Pro Ile Ile Ala Ser Gly His Ile Pro Val
209      210      215      220
211 Ile Ala Thr Val Gly Ala Asp Glu Thr Gly Gln Ala Tyr Asn Ile Asn
212 225      230      235      240
214 Ala Asp Thr Ala Ala Gly Glu Ile Ala Ala Ala Val Gly Ala Glu Lys
215      245      250      255
217 Leu Leu Leu Leu Thr Asp Val Ser Gly Ile Leu Ala Asp Arg Asn Asp
218      260      265      270
220 Pro Gly Ser Leu Val Lys Glu Ile Asp Ile Ala Gly Val Arg Gln Met
221      275      280      285
223 Val Ala Asp Gly Gln Val Ala Gly Gly Met Ile Pro Lys Val Glu Cys
224      290      295      300
226 Cys Val Arg Ala Leu Ala Gln Gly Val His Thr Ala Ser Ile Ile Asp
227 305      310      315      320
229 Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp Glu Gly
230      325      330      335
232 Thr Gly Thr Met Ile Thr Gly
233      340
235 <210> SEQ ID NO: 5
236 <211> LENGTH: 1204
237 <212> TYPE: DNA
238 <213> ORGANISM: Glycine max
240 <400> SEQUENCE: 5
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242 cccaaccaa ccccaaaacc aactcaccac tagccacgct ttcccttcca ctgcctccg 120
243 ccaccgcgcc atttccgcgg tggcgaacgc ggcgaacct ccactcgccg ccgccactgc 180
244 caccgagggt cagtaccgag tcgatgtgct ctcgagtcg ctccccttca tccagaaatt 240
245 cgcgcgcaa accatcgtcg tcaagtacgg cgcgcgcccc atgaagtccc cggagctcca 300
246 ggcctccgtg atcaacgacc ttgtcctcct ctctgcgtc ggcctccgcc ccgtcctggt 360
247 ccacggcggc ggcccgcaga tcaactcctg gctcggccgc ctcaacatcc ccgccgtctt 420
248 ccgcgacggc ctccgcgtca ccgacgccga caccatggag atcgtctcca tggctcctgt 480
249 cggaaaagtc aacaaaaccc tagtttctct aattaacaag gccggcgcca ccgccgtcgg 540
250 cctctctggc atggacggcc gcctcctcac cgcccgcccc gctcccaagg ccgccgacct 600
251 cggtacgtc ggcgaggtcg cagcgtcga tcccgccgtc ctccgtccc taatcgacac 660
252 cagccacatc cccgtcgtca cctccgtcgc cgccgatgaa tccggacagc cctacaacat 720
253 caacgccgac accgtcggcg gagaattggc agcgtcgtc ggcgcgaga agctgattct 780

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RAW SEQUENCE LISTING

DATE: 08/11/2003

PATENT APPLICATION: US/09/744,100C

TIME: 12:11:07

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF4\08112003\I744100C.raw

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254 gctgaccgat gtggcgggaa ttctggaaga tcggaacgac cctgacagct tgggtaagaa 840
255 gattgacata aaaggagtga agaaaatgat ggaagatgga aaagttggtg gtggaatgat 900
256 acctaagggtt aattgttgcg ttaggtcctt ggcgcaaggg gttattacag cgagtattat 960
257 tgatggtagg gttccgcatt ctttgttgct tgagattttg actgatgaag gtgctggaac 1020
258 tatgataact ggataagttt atttatttat ggtgtttgga ttttttcttt tcaatcaagc 1080
259 cttgagttga ggttgcatg cagcacttgt tttgttagag attggtgatt gtttttaagt 1140
260 gcgtgtaatg tgagagatgg ttgaattgaa ttgaatgttt cagaaaaaaaa aaaaaaaaaa 1200
261 aaaa 1204
263 <210> SEQ ID NO: 6
264 <211> LENGTH: 342
265 <212> TYPE: PRT
266 <213> ORGANISM: Glycine max
268 <400> SEQUENCE: 6
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270 1 5 10 15
272 Pro Phe Pro Thr Lys Pro Gln Asn Gln Leu Thr Thr Ser His Ala Phe
273 20 25 30
275 Pro Ser Thr Arg Leu Arg His Arg Ala Ile Ser Ala Val Ala Asn Ala
276 35 40 45
278 Ala Gln Pro Pro Leu Ala Ala Ala Thr Ala Thr Glu Gly Gln Tyr Arg
279 50 55 60
281 Val Asp Val Leu Ser Glu Ser Leu Pro Phe Ile Gln Lys Phe Arg Gly
282 65 70 75 80
284 Lys Thr Ile Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro Glu
285 85 90 95
287 Leu Gln Ala Ser Val Ile Asn Asp Leu Val Leu Leu Ser Cys Val Gly
288 100 105 110
290 Leu Arg Pro Val Leu Val His Gly Gly Gly Pro Glu Ile Asn Ser Trp
291 115 120 125
293 Leu Gly Arg Leu Asn Ile Pro Ala Val Phe Arg Asp Gly Leu Arg Val
294 130 135 140
296 Thr Asp Ala Asp Thr Met Glu Ile Val Ser Met Val Leu Val Gly Lys
297 145 150 155 160
299 Val Asn Lys Thr Leu Val Ser Leu Ile Asn Lys Ala Gly Ala Thr Ala
300 165 170 175
302 Val Gly Leu Ser Gly Met Asp Gly Arg Leu Leu Thr Ala Arg Pro Ala
303 180 185 190
305 Pro Lys Ala Ala Asp Leu Gly Tyr Val Gly Glu Val Ala Arg Val Asp
306 195 200 205
308 Pro Ala Val Leu Arg Ser Leu Ile Asp Thr Ser His Ile Pro Val Val
309 210 215 220
311 Thr Ser Val Ala Ala Asp Glu Ser Gly Gln Pro Tyr Asn Ile Asn Ala
312 225 230 235 240
314 Asp Thr Val Ala Gly Glu Leu Ala Ala Ser Leu Gly Ala Glu Lys Leu
315 245 250 255
317 Ile Leu Leu Thr Asp Val Ala Gly Ile Leu Glu Asp Arg Asn Asp Pro
318 260 265 270
320 Asp Ser Leu Val Lys Lys Ile Asp Ile Lys Gly Val Lys Lys Met Met
321 275 280 285

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/744,100C

DATE: 08/11/2003
TIME: 12:11:08

Input Set : A:\PTO.AMC.txt
Output Set: N:\CRF4\08112003\I744100C.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 613
Seq#:4; Xaa Pos. 195
Seq#:7; N Pos. 492,493,494,495,496,497,498,499,500,501,502,503,504,505,506
Seq#:7; N Pos. 507,508,509,510,511,512,513,514,515,516,517,518,519,520,521
Seq#:7; N Pos. 522,523,524,525,526,527,528,529,530,531,532,533,534,535,536
Seq#:7; N Pos. 537,538,539,540,541,542
Seq#:8; Xaa Pos. 133,144,145,146,147,148,149,150,151,152,153,154,155,156
Seq#:8; Xaa Pos. 157,158,159,160
Seq#:12; Xaa Pos. 2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,24
Seq#:12; Xaa Pos. 25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43
Seq#:12; Xaa Pos. 44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,60,61,63,64
Seq#:12; Xaa Pos. 65,66,67,75,81,83,87,107,118,134,136,137,138,139,140,141
Seq#:12; Xaa Pos. 144,152,153,156,158,163,168,170,174,175,176,178,179,181
Seq#:12; Xaa Pos. 182,184,185,186,187,188,191,192,193,196,198,199,200,201
Seq#:12; Xaa Pos. 203,204,207,209,211,212,213,214,217,218,219,221,222,223
Seq#:12; Xaa Pos. 228,229,230,232,236,239,247,251,254,255,261,263,267,271
Seq#:12; Xaa Pos. 274,277,282,283,286,290,292,293,294,296,298,306,310,311
Seq#:12; Xaa Pos. 317,340